NATIONAL COACHING INSTITUTE

Task 13

Analyzing Performance Factors

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Introduction

Any training program should be customized for the players involved. The program should fulfill the needs of the sport, the team and the individual athletes. Training sessions should showcase Intensity that matches games and Quality that meets the standards of all team members.

Elite Basketball Training

Basketball players must be capable of performing up to a thousand unique movements during a forty to forty-eight minute game, at varying degrees of intensity (Abdelkrim, El Fazaa, & El Ati, 2007, p. 72). Successful athletes possess excellent explosive strength, speed, endurance, agility and power, along with solid basketball fundamentals. Part of the attraction of basketball is the all-around skills required.

Throughout the season, strength and conditioning coaches develop a combination of strength, explosiveness, speed, balance, flexibility and quickness. Many top professional players also spend time performing corrective work to ensure that they maintain good technique to match their athleticism (Zimmerman, 2005).

Planning a Training Regiment

During the off-season and the pre-season (general) phases, players can achieve extensive gains in personal fitness if they are motivated. During the season, more time is devoted sport-specific preparation and conditioning is tapered in advance of competitions; building a performance factor becomes very difficult. Can you maintain technique and execute correctly under physical stress? Building team fitness during the pre-season is critical to deliver quality performance on demand in games to achieve success.

Plan training according to a periodization model. Start with higher volume and lower intensity and technique early in the season during the preparatory phase. Finish the season with less volume and more intensity and technique. Include taper and peak periods to coincide with major competitions (Taha, 2009).

The Role of the Coach

It is important that athletes follow technique correctly. For sport-specific exercises, players should master the movements before loading the drills. Players will only perform what they know and it is up to coaches to provide non-judgmental objective feedback. Coaches must coach and cannot permit incorrect repetitions that hinder progress, risk injury or result in a violation on the court (Pasquali, 2011).

Athletes are completing their growth spurt and are ready to practice more complicated movements. However, some may be new to the sport or unaware of good training habits so it is up to the coach to follow Long Term Athlete Development Principles. Youth coaches should adapt exercises to each athlete. Athletes in the Train to Compete stage should learn to perform

simple skills well. Instruct nutrition, recovery, injury prevention and other off the court concepts to support the development of the entire athlete. Fitness testing helps coaches monitor progress and gain feedback on their instruction.

Training Strategies for Youth Basketball

A focused team can perform many repetitions during a short workout. Alan Stein, who trained Kevin Durant and works with the DeMatha Catholic High School Boys Basketball Team aims to accomplish in forty-five minutes what other teams realize in an hour or longer (Stein, 2010).

Every little bit helps. Teams can improve strength, quickness and explosiveness by incorporating station work into each practice. If facilities are available, working out once or twice a week makes a difference. Use supplies that are inexpensive and easy to store at school or at home Sport-specific exercises at the beginning of practice can develop performance factors. When athletes have the energy the work at their maximum, it is the best time to develop explosiveness and quickness. Using additional resistance while practicing skills make games seem easier (Stein, 2010).

Social learning enables athletes who train together push each other to get better and pull together because the support of a friend or teammate is a powerful motivator. Athletes in the same Zone of Proximal Development can train together and work towards mastery-oriented goals (Subban, 2007, p. 937). They are also effective workout partners.

Don't use lack of facilities as an excuse: everything doesn't have to be perfect. You have the tools to start a high performance program **today** if you want. It is a matter of the team members committing to themselves and each other (Stein, 2010). The only limitation is creativity and reasonable safety precautions.

Have Fun

Everyone: players, coaches, managers and staff should relish their roles with the team and enjoy what they are doing. Variation prevents staleness and permits players to continuously improve themselves while keeping every workout and practice distinct (Price, 2006, p. 111).

Training should be enjoyable, interesting and challenging. The coaches should not only inspire the players to achieve the short-term personal goals of the season but motivate them to adopt a long-term vision of athlete development and personal growth.

Agility

Basketball demands agility, quickness and speed. Players consistently change direction as they move up and down the court. Agility is a major physiological ability among elite basketball players and training designed to improve this movement skill should be a priority for all coaches (Chaouachi, et al., 2009, p. 1575).

Given the rule changes, especially Canada's decision to adopt F.I.B.A. rules at all levels, it is imperative that all players are agile under game conditions, especially guards (Abdelkrim, El Fazaa, & El Ati, Time–motion analysis and physiological data of elite under-19-year-old basketball players during competition, 2007, p. 73). Basketball is fast-paced and technically complex and differences in agility may be slight (Hoare, 2000, p. 391).

Agility by Position

Players who play diverse positions require various levels of agility. There is a large gap in agility between guards and forwards, although there is not a significant difference between guards and wings and wings and forwards (Hoare, 2000, p. 395). In order to accommodate the zone of proximal development of each athlete, coaches could modify their training to suit the demands of the position they play and their current skill level.

Basketball success is based on a combination of domain-specific traits (such as height and coordination) and generic characteristics (such as general intelligence). A player may not perform to their full potential until all of the components have developed (Simonton, 2001, p. 42).

When evaluating composite skill, coaches should consider late developing athletes. For example a player who is technically skilled should not be excluded because they are a step slow. "Talent" development is dynamic so that speed deficiency can be addressed or a lack of height can be eliminated by a growth spurt. Coaches must understand this that talent is not measured on a single scale but along multiple dimensions.

Preparation and Anticipation

Athletes who recognize patterns are capable of reacting more quickly and seem more agile (Syed, 2010, p. 26). For example, when playing defence, basketball players should observe the core and pillar of their opponents, not their feet or the ball. On offence, players need to understand common situation and what is likely to happen so they can be better positioned than the other team, creating another agility advantage.

Professional soccer players demonstrate superior visual search strategies when handling the ball, an aptitude that would suit guards equally well. After athletes master the skilled movement, they should practice agility in a reactive setting. Instructors should design task-relevant cues so that players practice their mental training skills (Holmberg, 2009, p. 75).

At the youngest age level, all athletes should develop their balance first. Athletes who pursue quickness, speed, or explosiveness without stability will play off-balance, unable to apply their physical skills efficiently. Afterwards, they should train their agility so they can play the game at a fast pace (Messina, 2008).

Balance, footwork and movement skills must be consistent to permit feedback, such as: "the closeout was missed because their player initiated their short choppy strides too late and could not regain their control (Syed, 2010, p. 101)." It is important to form good habits before loading

the drills with more complicated movements. Repetition of specific actions, supervised by an expert instructor, is critical.

Short Races

There are many short sprints during a basketball games. Players never get up to maximum speed but they must race each other for the ball. The player who keeps their head up and watches the play develop will be able to anticipate the next play. This quickens reaction and creates the impression of greater agility. It is not only a matter of getting to a certain spot on the court but getting there in time to catch the ball and attack the basket (Pasquali, 2010). Playing against top competition, racing against the best, will inspire young athletes to become more agile.

Agility - demanded by the hundreds of rapid changes in direction during a basketball game - is linked to explosive strength, balance, co-ordination and flexibility (Lower Limb p. 1570). Training should never occur in a vacuum. Simulating game situations and competitions make the drills more interesting and effective (Chaouachi, et al., 2009, p. 1570).

Metabolic Training entails that coaches tailor drills to best simulate the performance demands of the sport. (Taylor, 2004, p. 24). Agility drills should be no longer than the distances covered by players during competition and the timing should be identical to games. These circumstances permit the development of visual perception and decision-making skills (Holmberg, 2009, p. 73).

Training Agility

Intermittent high intensity exercise is an effective form of conditioning for agility because it simulates the heart rate experienced during games and the fast-paced nature of the sport (Balčiŭnas, Stonkus, Abrantes, & Sampaio, 2006, p. 165). This power endurance training will increase anaerobic training, permitting sharp cuts, explosive leaps and dynamic movement as the game progresses.

Agility should be especially loaded during the Learn to Train, Train to Train and Train to Compete stages. Throughout the season, agility and other performance factors will be embedded in sport-specific drills. Load the drills with a clear progression, beginning with simple movements and expanding to include complicated actions and decision-making under pressure (Messina, 2008).

Purposeful practice demands that athletes compete at maximal intensity, pushing their limits. Coaches should establish drills that suit each athlete's Zone of Proximal Development and drives them to become more agile. Running an obstacle course will not deliver optimal result but realistic and challenging drills will allow each player to reach their potential (Syed, 2010, p. 82). During the general preparation phase, there should be a moderate amount of agility training, complete at game intensity. The volume of training should increase to a high volume during the specific preparation phase and decrease during the in-season phase (Taylor, 2004, p. 24).

Fatigue - mental and physical - will not only lead to a decline in shooting and passing accuracy but slower movements due to fumbling, miscommunication and hesitation (Lyons, Al-Nakeeb, &

Nevill, 2006). Training the anaerobic lactic system, which is primarily used during basketball (Abdelkrim, El Fazaa, & El Ati, Time–motion analysis and physiological data of elite under-19-year-old basketball players during competition, 2007, p. 73), will reduce these small errors, perhaps leading to one more game-winning shot during the season.

Balance

Before a basketball team can win, it must be balanced. There must be balance between offence and defence and between guards and forwards. Above all, players must be balanced if there are to reach their athletic potential on the court (Repeša, 2009). Basketball teams develop balance in order to prepare for training and competition. A player who is balanced is able to learn more and perform at a higher level than one who has not met this basic requirement (Messina, 2008).

Teams win because they are comprised of elite players who are ready to play. The teams move without the ball and take good shots. At the other end of the court, these teams follow sound defensive principals. Players rely on a strong first push, deny penetration without fouling and contest opponent shots (Šeparović & Nuhanović, 2008, p. 17).

The Importance of Good Balance

Body Position

Coaches must master the simple fundamentals, especially if they endeavour to coach youth basketball. Controlling balance helps both young and old players achieve at a higher level; they are able to attain and maintain impressive gains in quickness, explosiveness and agility. In order to mirror game situations, players should train in dynamic conditions which test their body control (Stein, 2010).

Ready Position

Elite basketball players must utilize excellent position and possess exceptional balance because the initial component of movement is being ready to move (Repeša, 2009). Athletes should be on the balls of their feet with their knees bent, heads up to read the play and hands up to catch the ball or play defence. Training single-leg strength in practice sessions (Ford, Single-Leg Strength, 2011). A player who is ready to move will appear quicker than a more athletic counterpart who is not prepared.

Injury Prevention

The body must be able to perform the movement without injury. Basketball players are at risk for ankle sprains, especially ankle inversion, due to jumping and landing out of balance, stepping the foot of another player, or while making a sudden change in direction (Cumps, Verhagen, & Meeusen, 2007, p. 212). A single ankle sprain can reduce confidence, increase postural sway and elevate the risk of future injury (Leanderson, Wykman, & Eriksson, 1993, p. 204).

Basketball Overview

Ankle injuries are the most common in-game basketball injury. During a single high school season, 17.9% of female players and 20.3% of male players will sustain an ankle injury. Lateral ankle sprains comprise eighty-five percent of all sport-related sprains (Shaw, Gribble, & Frye, 2008, p. 164).

Strengthening the ankles and core allows the athlete to place greater stress on the body. In addition to prevention, balance helps athletes recover from injuries, permitting athletes to move without favouring one side and restoring confidence.

Balance training is effective in reducing the risk of ankle sprains without the negative costs, such as expensive supplies or the chance of skin irritation (Cumps, Verhagen, & Meeusen, 2007, p. 212). This is noteworthy for youth coaches because most adolescent athletes do not use ankle support and many are unable to afford the costly equipment (McGuine, Greene, Best, & Leverson, 2000, p. 243).

Since basketball players may devote more time to strength training, they may inadvertently shorten the gastrocnemius muscle and tighten the Achilles tendon. This may create more plantar flexion and expose the ankle joint to a greater risk of sprains when landing. Flexibility training - during cool-down routines and at home - will improve balance and reduce injuries (Leanderson, Wykman, & Eriksson, 1993, p. 205).

Sport-Specific Skills

Shooting

In order to shoot well, basketball players must square up to the basket in a variety of positions. Whether the player employs a jump stop or pivots, they must stop moving and assume a balanced position before initiating the shooting motion. Stepping into the shot with a 1-2 step affords a longer time which aids the development of balance (McCormick, 2005, p. 11).

If players wish to use the quicker release of a two-foot jump stop they must have the ability to establish balance in a short period of time under great pressure. Shooting entails starting and finishing in a balanced position, staying under control throughout the process (MacKay, 2011).

Ballhandling

When ballhandlers are balanced - holding a steady posture and ready to explode to the hoop with a single-leg push - they are confident. They feel in control and ready to attack their opponent. A blanced ballhandling position includes bending the knees, standing on the balls of their feet, while keeping their heads up and maintaining a sturdy centre of gravity.

It is easy enough to show the correct position to players in a stationary or low-speed setting but coaches must also load the drills to simulate the intensity of aggressive of ball pressure. Dribbling while tossing a tennis ball, ballhandling while stepping through a speed lated and making full-speed ball mores while keeping the core centered over a line on the court will condition balance (MacKay, 2011).

Post Play

Post players should assume a balanced position before receiving the ball. Good balance helps players absorb contact so they can catch the ball in a high-percentage scoring position. Core and Pillar muscles provide a solid foundation that enables the lower body to apply and resist force (Willardson, 2007).

Defence

Defenders must be able to cover their own man for the first few bounces. After placing themselves between the ball and the basket, defenders must be able to make a good strong push in order to stop dribble penetration. Ready defenders can react and stop the ballhandler's first move, reducing the need to help and rotate.

Training Balance

Balance training can include three dimensional ankle movements (with or without shoes), balance boards and BOSU balance trainers and exercises especially designed to develop stability. Due to the dynamic nature of basketball, balance training should strengthen the ankle in all directions.

Teams can devote ten to fifteen minutes, two or three times per week, to strengthen the tendons and ligaments in their ankles and experience meaningful results. Standing on any type of unstable surface and requiring athletes to make adjustments with their ankles, knees and legs instead of their upper bodies will develop balance.

Explosiveness

"In basketball, everything is first step" says Jasmin Repeša, coach of the Croatian Senior Men's National Team (Repeša, 2009). A quick first step is paramount on the basketball court and it can be developed by proper technique and athleticism training. Single-leg strength powers this first push, which drives a ballhandler past the defence and towards the basket or enables a defender to close out quickly and cut down the three-point line (Ford, Single-Leg Strength, 2011).

Every athlete wants to be more explosive but very few know how to do so properly and safely. Achieving gains in explosiveness that improve performance on the court require a coach who is willing to inspire players to work at maximal Intensity and monitor the team so all repetitions are completed at the highest standard of Quality. Athletes must possess the discipline to train and practice with game Intensity and Quality throughout the season.

The Demands of Basketball

The average time of a movement in youth basketball is about two seconds. A one dribble sprint and a pull-up, a two-second cut and a jump-shot, jumping for a rebound and tipping it in. During

a forty-minute game, athletes may perform well over a thousand distinct movements (Abdelkrim, El Fazaa, & El Ati, 2007, p. 72).

High performance basketball players must be able to accelerate to high speeds in a short time. Developing dingle-leg strength and maintaining a ready position can enhance this explosiveness. Due to the three-dimensional nature of the sport, which is played in a rectangle that measures ninety-four feet long and fifty feet wide, a player may never reach full velocity in one direction but they must be proficient at frequently changing direction quickly during a play and accelerating along a new plane (Moreira, Okano, vaz Ronque, de Souza, & de Oliveira, 2008).

Starting players on collegiate and elite development teams tend to be older, taller and heavier than those who come off the bench. Those who played the most minutes also possessed a lower level of body fat, a higher vertical jump, more power from the lower body and better speed and agility (Hobbs, 2008, p. 15). Bench players are unable to control their age or their size but they can increase their explosiveness in order to close the gap in minutes.

Improved explosiveness will help both rolling and standing starts when running. Also, the ability to push quickly in another direction will make it easier to decelerate from a full-sprint sprint in order to perform a sport-specific skill. Explosive athletes will be able to push off one foot to jump into the passing lane and steal the ball, accelerate to a full-speed dribble and push hard off the floor in order to jump high and make the lay-up.

Fatigue and Overtraining

About sixteen percent of game time is spent on high intensity movements, like sprinting, jumping and sport-specific movements. However, this is not consistent throughout the competition. Early in the game, eighteen percent of movements are classified as high intensity. This ratio decreases gradually to about thirteen percent during the final quarter (Abdelkrim, El Fazaa, & El Ati, 2007, p. 72).

We do not want to lose a game because fatigue hindered a first push towards a loose ball. Training explosiveness will provide our athletes with greater endurance and enable better performance in late-game competitive situations. Loading drills with additional weight early in the season or performing multiple repetitions under game conditions builds capacity. However, do not overtrain athletes and allow for full recovery between sets in order to train in a nonfatigued state and practice maximal intensity (Wakeham, 1999, p. 268).

Sport-Specific Skills

Shooting can be improved with an explosive vertical jump and defence necessitates the ability to accelerate, decelerate and change direction. Youth who are deficient in these explosive skills will be utilized less in game situations (Sporiš, Naglić, Milanović, Talović, & Eldin, 2010, p. 66). These sport-specific skills also weigh heavily on playing time in professional basketball. Performance in European professional leagues is largely determined by shooting ability and defensive effectiveness (Šeparović & Nuhanović, 2008, p. 17).

Basketball Overview

The athlete who lacks size can develop their explosiveness and level the playing field. A short guard may need another few inches on their vertical leap when executing a floater in the lane or an undersized rebounder can compensate by recovering after landing and jumping again before the bigger opponents can react.

Elite coaches want to close out the three point line, limit opponents to one-and-done possessions, finish in the paint and score in transition. A player may not be as fast or as strong as their opponent but they can still perform these skills with a terrific first push.

Training Explosiveness

Complex training - combining strength and plyometric workouts on the same day – provides superior gains relative to other programs in terms of power ball throwing and acute and vertical jump performance. The plyometric training should not immediately follow strength training but take place after an recovery period lasting about three minutes (Ebben, 2002, p. 45).

A training program which loads energy systems, strength, power and skill in succession should accomplish the goals of a basketball team (Balyi, 2009). The strength loading period could include explosiveness exercises at a lower level of intensity in order to teach the movement to the athletes and build confidence (Mackenzie, 1997). Always practice a first push across all three planes of motion: coronal, sagittal, vertical. Include double and single leg explosiveness drills (Ford, Single-Leg Strength, 2011).

Long-Term Athlete Development

Youth coaches should understand the limits of the players who compose their teams. Some players may need more time to develop their fundamental movement skill, balance, or coordination before participating in plyometric exercises. Due to the prevalence of lower body injuries in basketball, especially knee and ankle (Shaw, Gribble, & Frye, 2008, p. 164), coaches should help athletes strengthen these body parts before pushing them too far.

Athletes who have not previously participated in plyometric training should start with low to medium intensity exercise with around forty contacts per session whereas experienced athletes can raise the level of intensity and perform up to two hundred contacts per session in a loading period (Mackenzie, 1997).

Off-Season Training

Basketball players can gain and lose explosiveness during the off-season. If an athlete eschews training during the off-season, they could be back to square one when the next season begins. They can maintain their vertical jump and first push by training explosiveness about once a week and can augment their results by incorporating a loading period for explosiveness. Such a period would last for about a month and consist of two workouts per week and four to six exercises per workout (Mackenzie, 1997).

Pre-Season and In-Season Training

Explosive movements should be trained in well-structured, focused drills which duplicate patterns that occur during games. Once the skill is developed to a certain point, repetitions are performed in high-speed game situations (Ford, Acceleration/Deceleration, 2011).

Explosiveness can be developed in the weight room, the basketball court, the stairwell, or any other available facility. The drills can be part of a training session (after strength training and recovery), stations at the beginning of practice, or imbedded within sport-specific skills. The only limitation is creativity. Coaches should constantly scrutinize workouts and stop the training for periods of active recovery and if the athletes are at risk of overtraining or technique suffers..

Quickness

Steve Nash maintains quickness among the attributes that he aims to annually improve. Whatever his absolute quickness, he believes that he can always increase his standard relative to his peers and relative to his previous results (Staph, 2008).

Definition

Speed is the velocity of the athlete along a straight line. Running the fast break, making a backdoor cut, or closing out an open shooter all suit the fast player. Quickness is the ability to change direction or speed rapidly. Both performance factors are valuable but quickness possesses more applications in basketball.

To get open in transition, a player must accelerate and reach top speed swiftly. To cut towards the hoop, a player must change direction and escape the defence. Speed is undoubtedly and asset but on a relatively small basketball court, it is useless without quickness.

Three Types of Quickness

- Coronal Plane Linear Quickness
 - Acceleration in a straight line
 - The ability to reach top speed in less time
- Sagittal Plane Lateral Quickness
 - Moving from side to side and changing direction
 - The ability to go sideways, stop, change direction and get up to speed in that new direction
- Transverse Plane Vertical Quickness
 - o Getting up (and often down and back up again) in the least possible time
 - The ability to jump high is distinct from the ability to rapidly get in the air and one can often substitute for the other

To improve overall quickness, divide the workout into drills that develop each type of quickness (Ford, Single-Leg Strength, 2011).

Benefits

Excellent quickness benefits many athletes in basketball. The athlete with great linear quickness reaches top speed in less time and often receives opportunities in transition. A superior first step creates lanes to the hoop on offense and helps close out and pressure shooters on defence. The athlete with better lateral quickness moves well defensively, preventing the dribbler from turning the corner and staying out of foul trouble. Offensively, quick cuts generate open shots and back door chances.

The athlete with exceptional vertical quickness is an outstanding rebounder, especially when recovering to leap after a shot-block or rebound attempt. Getting off the ground swiftly permits a shooter to release a shot over the defender or elude arriving help. The athlete who combines all types of quickness is dangerous with or without the ball, getting open in high percentage scoring situations. An athlete such as Scottie Pippen was able to combine quickness with his length and athleticism to become a feared defender.

Changing Direction

It is most efficient to convert as much force into acceleration as possible. Consequently, excessive mass is disadvantageous. Basketball players should strive for a high muscle-to-mass ratio. A strong ratio - especially among the calves, hamstrings, quads and hip flexors - permits a player moving forward to exert a powerful sideways force on the ground (Walters, 2011).

As a result, the player can change course as part of a crossover dribble, a V-cut, or a step-back jumpshot, among other moves. The defensive player can apply a lateral force to stop their momentum, drop-step and push off in the new direction. The stronger the forces, the quicker the movement to get open or catch up to the check (Krause, Meyer, & Meyer, 1999, pp. 22-23). Force is equal to mass times acceleration. The more explosive the acceleration, the more powerful the first step (Gay, 2004, p. 84). Technique remains imperative.

The dribbler who can't efficiently change direction is liable to encounter a defender who has beaten them to the spot, the difference between the two proving to be the ability to stop and change course on a dime. *Plant the lead foot, pivot and push off in the new direction*. The shortest route in the limited confines of a basketball court is a straight line .

Reaction Time

People need about 0.2 seconds to react to an event that occurs in front of them. Given that time, the offence has an edge because they know what will happen next, before the defence can adjust. The quick player, can take the first step towards blowing by the defence, plants and change direction, make a ball move or fake a shot-blocker. The quicker the player, the greater their lead by the time the opponent reacts.

On the other hand, the quick defender can recover in less time. Even though they start behind the offence, after they perceive what has occurred and decided what to do they can catch up to a slower opponent. Controlling a loose ball or rebound, getting a hand up and blocking a shot, or dropping down to help a teammate are all occasions when quickness permits the defence to overcome their delayed reaction.

Foul Trouble

Defenders foul when they reach for the ball and miss, obstruct or hold their check, or contest the shot and contact the shooter. Quickness proves beneficial in these situations, allowing defenders to keep pace with their opponent and shut them down instead of fouling to prevent a scoring chance (Krause, Meyer, & Meyer, 1999, p. 120).

Similarly, if the offence is able to force the other team into a weak defensive position, they create the opportunity for more fouls. Linear, lateral and vertical acceleration are all required to defend someone straight-up, within the rules. Likewise, all three types of quickness come in handy when attacking the defence and putting them on their heels.

Reaction Time

Initially, it was believed that the body and mind were powerfully connected; once a human mind made a decision, the body acted immediately. Galileo Galilei, endeavouring to prove that the speed of light was finite, estimated a human reaction time of 0.5 seconds in the seventeenth century, which was lowered to 0.2 seconds in 1905 by Edward Titchener (Foschi & Leone, 2009, pp. 1255-7). Within the confines of a basketball court - ninety-four feet long and fifty feet wide - both players receive information at the same time and it becomes a matter of who reacts better.

Before

BOdy: A coach needs to teach proper position, in concert with the team's philosophy and the skills of each individual. Anticipate and prepare before the ball arrives was emphasized. Rather than wait to catch the ball and make a move, Ettore Messina suggested that post players place their feet into position beforehand to save a step and a half-second (Messina, 2008). Jasmin Repeša linked staying low and balanced with a quick and powerful first step (Repeša, 2009).

Mind: Players should understand what is likely to happen next, based on geometry, the scouting report and decision-making under pressure. Senseless risks on defence, such as trying to steal the ball by jumping into the passing lane, have a low chance of success. If a defender misses, they are out of the play and teammates must rush to help. An open shot may result. When the mind is not engaged, the risk is rarely worth the reward.

When Michael Jordan stole the ball from Karl Malone in Game 6 of the 1998 Finals, he was not gambling. Knowing that primary option of Jeff Hornacek's low screen for was a post-up for Malone so he lingered under the basket. Seeing how Rodman was playing Malone on the high side, Jordan swept in along the baseline and stole the ball from below.

In the Moment

BOdy: A player cannot make an aggressive move, offensively or defensively, when they are not balanced (Repeša, 2009). When faking or being faked, players should stay low and in balance so they can make the next move. Waiting for an opponent to make a move is too passive; players should take initiative and force the action. An offensive player should stay balanced while scanning the court, pivoting and making fakes. A defensive player should stay balanced while pressuring the opponent and making constant moves for the ball.

If coaches teach correct body position to players and trains the performance factors required, such as legs and hip flexors. We want players to push off the correct foot, not take a step back into order to plant themselves, twist their hips to change direction and stay balanced instead of reaching (MacDonald, 2009).

Mind: When training performance factors, coaches also need to develop the mental connections required (Balyi, 2009). It is one thing to improve speed but the part of the brain which tells the body to sprint at maximum intensity must also receive attention. The coach should give quick instructions that force athletes to react and move.

After

BOdy: Coaches should stress that when one play is over, players should rush to their next positions. The time for congratulations is after the game. It is the responsibility of the coach to ensure the players know their job; it is the responsibility of the player to get in position as quickly as possible and do their best.

After the ball is moved, a player should shift their position instantly. The on-ball defender should jump to the passing lane, the strong-side defender should make a decision and defend the ball, the weak-side defender should move under the airtime of the ball and closeout. The ballhandler should try to attack the basket with an aggressive first step. The passer should cut or screen. Other players should read how the defence moved and strive to make something happen.

Roger Federer begins his recovery immediately after striking the ball and is so efficient that he uses one or two extra steps. Federer trains his legs so that he has the strength to plant either foot and push off quickly, giving him an advantage. If his opponent returns the ball, Federer is balanced and ready to move (MacDonald, 2009).

Mind: Andy Murray, coach of the St. Louis Blues, admires Tiger Woods because of his ability to recover. He never wants players to give up on a shift and devotes mental training so that regret never stews on the bench, affecting future sequences (Murray, 2009). Mike Krzyzewski used the motto "Next Play" for Duke's 2001 National Championship team (Krzyzewski, 2006, pp. 112-6).

Never stop moving. Never stop talking. The team recovers together because of instant communication and good positioning. Resting on one's laurels allows the opponent back in the game. After a failure, anger and frustration increase cognitive anxiety. Players need to know

what to do strategically and emotionally. Coaches and teammates can help on the bench so that their minds are clear during their next shift.

The shot-clock is twenty-four seconds. A team that is physically and mentally prepared can react in 0.15 seconds instead of 0.2, creating an advantage whenever the ball moves. That edge may allow time for an additional pass or dribble as the shot-clock winds down. A slower player who reacts quickly may have time to start their movement earlier and catch up to a faster opponent. Better reaction allows a team or player to initiate the action and control the play

Speed

Be careful not to overtrain speed because it is not a critical performance factor in basketball. It may be impressive when a player sprints down the wind to finish on the fast break but these cases are rare during games. Basketball is a chaotic sport, involving a large number of discrete athletic movements, most of which last less than two seconds. As the level of play rises, so does the speed of the action. The fastest player is not always the best player; the best player is the one who can perform complicated movements under control.

Time-Motion Analysis

Any speed training should be modified to suit tactical metabolic training: drills and exercises designed to mimic the physical demands of the sport. At the most basic level, this means that athletes will never run more than the length of the court without a change in direction -- likely running many sprints at much shorter distances (Taylor, 2004, p. 26). Also, the rest:pause ratio of training sessions should be the same as games, which is about 2:1 (Abdelkrim, El Fazaa, & El Ati, 2007, p. 71).

Out of the thousand different movements performed in a basketball game, only ten percent are sprints at maximal velocity. Most sprints last less than 1.5 seconds so training should be adjusted accordingly. Only a quarter of all sprints last longer than two seconds and only five percent last more than four seconds (McInnes, Carlson, Jones, & McKenna, 1995, p. 391).

Sport-Specific Speed

Speed is only valuable within the context of movements which are valuable within the sport. Jason Kidd and Steve Nash are not the fastest players on the court yet they are very dangerous because of their change of pace dribbles and abilities to make decisions at game speeds. A ballhandler may be adept with various moves but they will never be able to explode to the hoop if they lose their balance and take time to recover.

Central Nervous System and Reaction Times

Training should also develop the body's Central Nervous System and ability to perceive and react. A body that sends signals to activate the its limbs efficiently becomes a faster person (Balyi, 2009). Sprints which simply demand that an athlete accelerate to full speed before

Basketball Overview

slowing down will achieve this function, as will an exercise that requires an athlete to react to a cue in order to choose which direction they will move (Stein, 2011). Athletes could also react to a teammate, opponent, or coach before commencing their sprint (Pasquali, 2010).

Given the short nature of sprints during the basketball, it becomes as important to train one's rapid response as it does maximal velocity. Although the court may be ninety-four feet in length, most of the runs are shorter; common distances include ten, twenty and fifty feet (Taylor, 2004, p. 29). The player who anticipates well and reacts swiftly during dynamic game situations will be quicker - a critical attribute - than the more athletic counterpart.

Acceleration and Decceleration

Balance is also a significant factor (Stein, 2011). Balance is essential because a first step must be under control and a player who is decelerating must recover their centre of gravity. In order to accelerate rapidly, athletes need to be stronger - especially in the lower limbs - in order to push off with their first step. Practicing sport-specific moves at peak intensity (utilizing both the right and left feet) will test the limits of athletes (Maroko, n.d.).

Guards can dribble at full speed for one or two dribbles and hit a pull-up jumpshot. Posts can run a short distance, such as from halfcourt to the paint, before catching a ball and making a power lay-up. A lateral shuffle for four or five steps followed by a quick deceleration in order to take a charge or a few long strides ending in some short choppy strides to get under control will develop defensive speed.

Load speed drills, moving from fundamental movement skill to pattern running to reading and reacting. Instruct athletes regarding the relevant clues to be monitored and advise them how to promptly respond (Holmberg, 2009, p. 76).

The acceleration and deceleration and the changes in direction necessitate lightning reflexes. Drills which force the muscular and nervous systems to work in tandem can develop sport-specific speed. A workout comprised of two-inch runs, base rotations and line jumps can be effective and requires little time to perform (Slater, 2009).

Jumping and Landing

The accelerations and decelerations that are part of speed training are excellent preparation for the jumping and landing which is an integral part of the sport (Ford, Acceleration/Deceleration, 2011). On average, players perform about forty-four jumps per game so it is necessary that they can do so explosively and safely (Abdelkrim, El Fazaa, & El Ati, 2007, p. 71). Landing awkwardly is the leading cause of lateral inversion ankle sprains, one of the most common injuries in basketball (McGuine, Greene, Best, & Leverson, 2000, p. 242).

Training Speed

Year-round conditioning for basketball contributes to improved performance and reduced risk of injury. Key sport-specific physical performance factors include anaerobic and aerobic energy

systems, muscular strength, power and endurance and flexibility. Although maximal velocity can be developed during a program that lasts at least six weeks, improvements are relatively insignificant and should be balanced against the risk of an overuse injury (Mikolajec, Góralczyk, Poprzecki, Zajac, Szyngiera, & Waskiewicz, 2003, pp. 40-47).

Dynamic Warm Ups

At the conclusion of the dynamic warm up, teams should perform a few short speed drills. These brief exercises will physically activate key body parts - muscles like calves, quadriceps and hamstrings and joints like ankles, knees and hips - and mentally energize the players in preparation for practice. A thorough dynamic warm up will reduce the risk of injury and raise intensity throughout workouts, practices and games (Balyi, 2009).

Active Recovery

Obviously, the better the aerobic base, the quicker the recovery for the next sprint. In games, high intensity sprints occur every twenty-one seconds (Chan, 2011). However, there is non-stop chaotic action of varying degrees of intensity so all workouts should occur some form of active recovery, whether the work:pause ratio is 1:2 for tactical metabolic training or 1:4 for maximum velocity speed training.

Assessment and Evaluation

Assessment should be designed to improve performance, in addition to identifying those most likely to succeed in game situations. Testing usually combines speed, power and agility, like the "T" test or a sport-specific skills test requiring players to move across the Coronal, Sagittal and Transverse Planes. Testing should require different movements, such as lateral shuffling, back-pedalling and a combination of movements.

Training Groups

Different positions need different levels of sprint training. Guards run at maximum intensity more than forwards and posts (guards complete about twenty percent more sprints than a post during games). Posts seem to run about fifteen percent more slowly than guards and forwards.

When planning practice time for physical performance factor training, coaches should be aware that guards spend about 5.9 percent of game time sprinting and 9.3 percent performing a high intensity sport-specific movement, compared to 4.5 and 7.9 percent respectively for posts (Abdelkrim, El Fazaa, & El Ati, 2007, p. 72).

Coaches should consider that while posts may run longer sprints than guards (basket to basket in transition), guards shuffle laterally longer because they are perimeter defenders (Delextrat & Cohen, 2009, p. 1980). While providing extra speed work for perimeter players could provide more strength and balance work for those who play in the paint. These divisions will also create a zone of proximal development effect, motivating sprinters of similar speed to push each other to improve.

Strength

Incredible strength is not required for the sport but it is critical that the athlete be able to quickly deploy their strength. Strength training improves the following skills: shooting a longer jump shot, jumping higher, playing defence in the paint, blocking a shot, protecting the basketball, making crisp passes and stealing the ball from the opponent.

Primary Strength Needs

Points of emphasis are core strength and explosive strength matching the intensity of the game.

Lower Body

One of the most important uses of strength in basketball is its contribution towards a high vertical jump which is required for defense (contesting shots, stealing passes), rebounding (at both ends of the court) and shooting (to elevate shots over a defender). During an elite game, the average player executes 247 high intensity movements, including forty-four jumps (Abdelkrim, El Fazaa, & El Ati, 2007, p. 72).

Many training programs are backwards-designed. When there is a performance gap, strength and conditioning coaches will address the cause (the physical performance factors and fundamentals that underlie the skill) before tackling the symptoms. For example, a player has a slow first step should try to achieve strength gains in the lower body first (Zimmerman, 2005).

Contribution of the Lower Body to Basketball:

- Muscles Used: Quadriceps, Hamstrings, Calves
- Uses: jumping to shoot or rebound, running up the court, dribbling

Upper Body

Elite players need to attain a minimum of upper body strength in order to be competitive on the court but a high score is not critical to playing time or athletic success. When two players possess similar skills and experience, the athlete who is fitter usually plays more (Hoffman, Tenenbaum, Maresh, & Kraemer, 1996, p. 70). The upper body strength of Eastern Commerce basketball players who accepted college scholarships in the 2000s was less than their teammates.

Although one third of National Basketball Association teams use the bench press as a physical performance factor tests (Simenz, Dugan, & Ebben, 2005, p. 496), players should not obsess about their absolute strength. Once they have reached the minimum level, they should concentrate on developing their dynamic strength on the court. Too much strength training can detract from performance on the court (Zimmerman, 2005).

Contribution of the Upper Body to Basketball:

- Muscles Used: Triceps, Biceps, Shoulders, Chest Muscles
- Uses: shooting the ball, passing

Core

Core work is essential for basketball (Stein, DeMatha High School Weight Room Tour, 2010). Players will become more confident, fight harder for loose balls, pivot more aggressively and make the most of the strength in the upper and lower bodies. Core strength helps players improve their balance and generate explosiveness.

When a player possess a stronger core area, it becomes more difficult to to knock a stronger player off the ball as they dribble. While fouled by defenders, players maintain more consistent motions as they shoot while defended, increasing accuracy and leading to three-point plays (or made baskets if the foul is not called).

Contribution of Core to Basketball:

- Muscles Used: Abdominals, Gluteal Muscles, Hips, Lower Back
- Uses: transferring strength from legs to upper body, playing defence, protecting the basketball while dribbling

Putting it Together: Vertical Jump

Many basketball players focus upon their vertical jump because of its correlation - real and perceived - to success on the court. Vertical jump height is highly correlated to playing time at the collegiate level (Hoffman, Tenenbaum, Maresh, & Kraemer, 1996, p. 69). Athletes must train their lower body (quadriceps, hamstrings and calves) and core (hips, glutea, abdominals and lower back). A high vertical jump demands that a player be very powerful and explosive. Those who jump the highest possess outstanding flexibility, core, strength and power (Stein, Improve Your Vertical Jump by Training Your 'Core 4', 2010).

It is not simply a matter of repeating leg presses or squats. Shots are taken at any time during games and players must be able to load quickly in order to explode upwards. Some factors, like the abundance of fast-twitch muscles in the lower body and the central nervous system (C.N.S.) are genetically determined and difficult to develop although all athletes who train will observe some improvements (Stein, The Truth about Vertical Jump, 2010).

Despite extensive training, some elite athletes under-train their hips and hamstrings (Theoharopoulos, Tsitskaris, Nikopoulou, & Tsaklis, 2000, p. 461). The hips must be developed because they contribute twenty-three to thirty-nine percent of the total work performed during the vertical jump (Holcomb, Lander, Rutland, & Wilson, 1996, p. 84). Coaches should take care to train all muscle groups and both sides equally.

Strength Training Components

Due to the importance of other physical performance factors, such as agility and speed, coaches should consider training in sport-specific situations (Chaouachi, et al., 2009, p. 1575). Upper and lower body explosiveness in young basketball players can be improved with a combination of plyometrics and resistance training. This training - when closely supervised – carries a low

risk of injury or long-term harm. A single session can include both plyometric and resistance training (Santos & Janeira, 2008, p. 908).

Plyometrics Training

Every N.B.A. team uses some form of plyometrics for lower body, upper body, core, or explosiveness training (Simenz, Dugan, & Ebben, 2005, p. 498). Medium to low frequency plyomteric training produces similar gains in sprinting and vertical leap as higher frequency training but with greater efficiency (Sáez Sáez de Villarreal, González-Badillo, & Izquierdo, 2008, p. 722). Especially with young athletes, there is no need to overdo training in terms of intensity and quality.

Some plyometrics fail to train the muscle groups in proportion to their contribution to the vertical jump and must be adjusted to the requirements of the sport (Holcomb, Lander, Rutland, & Wilson, 1996, p. 83). Consider bending more at the waist during depth jumps to exercise the hips or starting the exercises from common basketball positions.

Athletes should begin with plyometric training once per week and build towards twice weekly training (in addition to resistance training -- some resistance and plyometrics sessions can be combined). Brief periods of detraining, for example three weeks, during taper periods can induce an improvement in running and jumping (Sáez Sáez de Villarreal, González-Badillo, & Izquierdo, 2008, p. 724).

Resistance Training

On average, professional basketball players train three to four times weekly for durations of about forty-five to sixty minutes per session. Teams use free weights or Olympic-style weight lifting; machines are used in limited circumstances. Common exercises include the squat (and variations like single-leg squats, split-leg squats and leg presses), Olympic lifts (such as variations of the clean and hang clean), lunges, core exercises and bench presses (Simenz, Dugan, & Ebben, 2005, p. 499).

Cardiovascular Training

Although players may execute over a thousand distinct movements during the game, they also run up to five kilometres (Narazaki, Berg, Stergiou, & Chen, 2009, p. 425). The aerobic energy system as shown a higher VO₂ max score, the more game time a player can devote to active movements, such as sprinting and jumping (Narazaki, Berg, Stergiou, & Chen, 2009, p. 429). Strength conditioning is inexorably linked to energy systems training.

Strength training should follow a short five to ten minute cardiovascular warm-up. Intense strength training (resistance, plyometrics, combined) pushes athletes past their aerobic threshold and increasea blood pressure (Kleiner, Blessing, Davis, & Mitchell, 1996, p. 60). Energy systems and strength endurance optimize performance in competitions (Zimmerman, 2005).

Training Strength

Mixing up exercises and combining different types of training increases the enjoyment of working out. A unique and diversified program results in better adherence to the training regiment and improved results (Santos & Janeira, 2008, p. 908). Players can become stronger with a few minutes every day. Some drills are best performed in pairs, which also provides for constructive feedback, accountability and positive encouragement.

Not every school or youth team has access to a fitness room with free weights and machines so coaches must be creative with incorporating strength training into practice. Workouts with body weight and low resistance (with pilates equipment, power balls or resistance bands) suit those who are new to strength training and simulates basketball movements.

Youth Training

Young athletes, including those younger than twelve years old, can achieve gains in strength, maximal oxygen uptake, body composition and motor performance skills as a result of strength training (Faigenbaum, et al., 1996, p. 109). It is important that coaches closely monitor the training so that players follow correct form and do not lift too much weight.

At the beginning of puberty, there is an increase in the muscular proportion of young men from twenty-seven to forty percent of body mass. Training at this time can achieve high gains in strength (Santos & Janeira, 2008, p. 907). Use a Yearly Planning Instrument with macro and micro cycles to ensure players do not overtrain and allow for taper periods before important competitions. Start with higher volume and lower intensity and technique early in the season during the preparatory phase.

Recovery

Basketball players must recovery in order to absorb the gains from training. Workouts can alternate intensity levels, train different muscle groups and include various performance goals. Corrective work helps perfect technique, enable the low and dynamic movements required for elite basketball and increase flexibility. Active recovery disperses lactic acid and speeds transitions between components of a workout. Proper nutrition after a workout is paramount, including high carbohydrates foods to replenish energy, proteins to build muscles and fluids to rehydrate (Zimmerman, 2005).

Program Length

Even a strength training program as short as eight to twelve weeks - three times weekly - can effectuate significant gains in jump height and power (Caruso, et al., 2008, p. 702). Jumps and movements should be performed at the speed that they will be executed in games for optimal results (Caruso, et al., 2008, p. 772). Any program should be continued throughout the season because stopping the training will result in significant loss of strength, even if the youth is participating in other athletic activities (Faigenbaum, et al., 1996, p. 113). Provide support for athletes who wish to pursue the training on their own time outside of the team.

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Task 13 Analyzing Performance Factors

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Agility

Every student-athlete begins the year at their own unique level so the coach must push everyone to get better in order to meet the challenges of the season. Select three to six stations for each workout. Mixing up different drills adds variety and challenge. The work:pause ratio is 1:2.

1 "T" TEST AGILITY TEST

Instructions:

- Arrange cones as shown
- The runner begins at D and runs forward to B
- Touch B and slide towards A (face forwards, using defensive footwork)
- Touch A and slide towards C
- Touch C and slide back to B
- Touch B and run back to D

Volume:

• Repeat 3x → Build up to 5x

Points of Emphasis:

- Touch all the cones but do not stop moving
- Stay under control
- Anticipate next move

Skills:

• Moving without the ball

2 LATERAL SPEED LUNGES

Instructions:

- Place two cones five yards apart
- Start in a squat position in front of one of the cones
- Slide to the opposite cone and squat
- Return to the starting cone and squat

Volume:

• Repeat $3x \rightarrow$ Build up to 5x





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Points of Emphasis:

• Face forwards and maintain defensive stance

Skills:

• Defensive stance

${f 3}$ rapid fire dribbling

Instructions:

- Dribble using rapid fire footwork for six feet (speed ladder optional)
- Explode to the hoop and make a lay-up
- Rebound and repeat the sequence

Volume:

- 60 sec. → Build up to 90 sec.
- Advanced: Step outside the squares (lateral footwork).

Points of Emphasis:

- Keep head up and feet moving
- Maintain balance while dribbling

Skills:

- Dribbling
- Changing Direction

4 HELP, RECOVER, & CLOSEOUT

Instructions:

- Place cones around the key
- Start in the middle of the key
- On the partner's comment ("left" or "right"), slide to that cone and recover to the middle
- On the next command ("left", "middle", or "right") closeout to that pylon then sprint to halfcourt and back to the baseline





Volume:

• Repeat $3x \rightarrow Build up to 5x$

Points of Emphasis:

- Keep head up
- Closeout under control

Skills:

Realistic movement

5 drop-step mikan drill

Instructions:

- Stand on the block (or one big step away from the hoop)
- Self-pass the ball and drop-step towards the baseline
- Make the lay-up, grab the ball as soon as it passes through the net, and move to the opposite block
- Repeat from the other side

Volume:

- 60 sec. → Build up to 90 sec.
- A partner can simulate passive defence

Points of Emphasis:

- Keep the ball high
- Move quickly and swiftly at all times

Skills:

- Post moves
- Pivoting

6 BOX JUMPS

Instructions:

• Arrange one twelve inch box and one twenty-four inch box close together



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• Jump on to the shorter box, jump off, jump on to the larger box, jump off, and return to the start

Volume:

- Perform the sequence with single leg (both right and left feet) and double leg jumps
- Repeat $2x \rightarrow Build up to 3x$

Points of Emphasis:

- Stay in an athletic stance
- Keep knees bent

Skills:

- Vertical Leap
- Rebounding

7 race to the hoop

Instructions:

- Two players with basketballs line up on the baseline
- On the coach's command, they dribble towards a cone, place their basketballs on the X, and sprint to another ball on the floor at midcourt.
- The first player to arrive picks up the ball and attacks the basket. The second player must catch up and play defence.



Volume:

- Repeat $5x \rightarrow Build up to 7x$
- The coach can adjust the distances to suit each player's abilities in order to make the race competitive.

Points of Emphasis:

• Use efficient footwork, especially when changing direction.

Skills:

• Switching from offence to defence

8 STOP THE BALL

Instructions:

- Player 1 dribbles up the court and makes an early entry pass to Player 2.
- Player 2 catches the ball and attacks the basket.
- Player **1** must switch to defence and stop the ball by establishing good position, without fouling.

Volume:

- Repeat $4x \rightarrow Build up to 8x$
- All players should practice both offence and defence on each side of the court.

Points of Emphasis:

- Starting the fast break quickly.
- Read the opponent and make safe decisions.

Skills:

• Recovering from turnovers in transition

9 PASSING & FOOTWORK

Instructions:

- Player starts drill by making a chest pass to the coach.
- Push off the left foot and make a single-leg jump on to a BOSU device.
- Bounce off the BOSU and move laterally through a speed ladder, passing and catching with a coach.
- After passing through the ladder, dribble by the coach at full-speed, and execute a pull-up jump shot.





Volume:

• Repeat $3x \rightarrow Build up to 5x$

Points of Emphasis:

- Master solid footwork before loading the drill.
 - Complete the drill without a ball to build footwork.
- Keep chin up while performing all skills.

Skills:

• Acceleration, deceleration, changing direction

10 POST PLAY AGILITY

Instructions:

- Two players start outside of the paint holding power balls in an explosive push-up position.
- Coaches stand around the court with a ball.
- After hearing the "*GO*" signal, both players get up and race into the key. The first player is the offensive player and the second player assumes a defensive position.
- The coaches pass the basketball around as the players adjust their position.
- The coaches may shoot or pass the ball inside.
- Continue until the defence secures the ball.

Volume:

• Repeat 5x for each position

Points of Emphasis:

• Adjust to the position of the opponent and the ball.

Skills:

• Moving from one balanced position to another

Balance

Ankles can be strengthened with a quick warm up routine, such as walking on the toes, heels and sides of the feet, followed by small hops, rolls and balancing exercises. Balance can also be improved with cool down routines and flexibility exercises performed during all training phases



(Javorek, 1995, p. 70). A few simple ankle exercises contribute to significant gains in single-leg strength and stability. The work:pause ratio should be 1:1.



Instructions:

- Place one foot in the centre of a BOSU
- Use the toe of the second foot to help steady yourself
- Remove the second foot and balance on the BOSU with one leg
- Keep balance by adjusting the ankle
- Get back on immediately after falling over

Volume:

- Stand on the BOSU as long as possible
- 60 sec. → Build up to 90 sec.
- Repeat 3x on each foot

Points of Emphasis:

• Remain relaxed; keep hands by the side

$\mathbf{2}$ two-foot jumps

Instructions:

- Place an "X" on the floor with tape
- Stand in one quadrant of the "X"
- Make two-foot jumps forwards, backwards, and side to side; do not follow a set pattern

Volume:

- 30 sec. → Build up to 60 sec.
- Repeat $3x \rightarrow Build up to 5x$
- *Advanced:* Twist/Pivot on one foot to develop transverse quickness

Points of Emphasis:

- Keep knees bent and bounce across the "X"
- Stay moving





$\mathbf{3}$ calf raises

Instructions:

- Assume a balanced position: knees bent, feet shoulder-width apart, standing on the balls of the feet
 - o Hold a power ball in the shooting pocket
 - Look up and keep back straight
- Inhale and begin the shooting motion
 - Finish on the tips of toes with the ball overhead
- Exhale and lower yourself

Volume:

• 3 sets x 8 reps → Build up 3 sets x 12 reps

Points of Emphasis:

• Stay under control; do not jump off the ground



Instructions:

- Stand on the ball of one foot
- Lift the other leg and slowly swing the ankle from side to side
- Gradually increase the size of the motion and swing the foot in front and behind the standing leg
- Repeat with the other foot

Volume:

- 30 sec. → Build up to 60 sec.
- Repeat $3x \rightarrow Build up to 5x$
- *Advanced:* Expand the motion into a complete lunge

Points of Emphasis:

• Slowly but surely swing the ankle tendons





Explosiveness

Athletes should perform as many repetitions as they can while maintaining good technique. Some activities may start with three sets of six repetitions or three thirty second intervals. An appropriate work:pause interval is 1:1 with active recovery during the pause periods to dissipate lactic acid.

1 TWO-INCH RUNS

Instructions:

- Place two cones twenty yards apart
- Start at one end in an athletic stance
 - o Keep knees bent and hips back
 - Hold back straight and look up
- Taking two-inch steps, run to the other cone
 Swing arms normally
- Touch the cone and run backwards to the starting line

Volume:

• Repeat $3x \rightarrow Build up to 5x$

Points of Emphasis:

- Establish a consistent rhythm
- Run at seventy-five percent intensity

2 BOUNDING

Instructions:

- Assume a relaxed stance
- "Bound" forwards for thirty yards
 - o High knees
 - o Exaggerated arm swings
 - o Push off one foot
- After reaching the other end, turn around and bound back to the start
 - Look backwards for safety purposes







Volume:

• Repeat $3x \rightarrow Build up to 5x$

Points of Emphasis:

- Remain calm and loose
- Bound at fifty percent intensity

3 SINGLE-LEG HOPS

Instructions:

- Stand on the right foot with knees bent
- Push off the right foot and jump forwards and laterally
- Land on the left foot with knees bent
- Pause for a moment before jumping back to the right foot

Volume:

- 3 sets x 8 jumps \rightarrow Build up 3 sets x 12 jumps
- Advanced: Complete a (balanced) single-leg knee bend after each hop.

Points of Emphasis:

• Remain balanced; take an extra moment to regain balance if required.

4 DEPTH JUMPS

Instructions:

- Stand on a twelve-inch box or a bench
 - Hold a basketball or a power ball with both hands
 - o Align toes with the edge of the box
- Step off the box and jump to the ground
 - Land on the balls of the feet with knees bent
- Jump vertically with the ball overhead

Volume:

• 2 sets x 6-8 jumps → Build up 3 sets x 6-8 jumps





Points of Emphasis:

• Spend as little time as possible on the ground before exploding upwards

Quickness

A quick first step or the ability to quickly help and recover can create profound advantages on offence and defence. Quickness drills should include movement across all three planes (coronal, sagittal, vertical). Working in three directions simulates basketball game situations accurately. The All-Around drills combine quickness in three directions with decision-making on the fly.

Exercise Breakdown

- **1 and 2:** Coronal Plane (Linear)
- **3 and 4:** Sagittal Plane (Lateral)
- **5 and 6:** Transverse Plane (Vertical)
- 7 and 8: All-Around Quickness

Select four to six stations for each workout. Work on quickness two or three times a week early in the season and once or twice weekly as the season progresses. The work:pause ratio is 1:4.

1 ZONE BUSTING SHOTS

Instructions:

- Place cones in the short corners and the top of the key
- Start in the right corner without the ball
 - Two partners with balls will stand on each wing
- Cut through the key
 - The partner may or may not pass the ball
 - o If the pass is made, square up and shoot a jumper
- Cut to a new spot as the partner rebounds

Volume:

- Make five shots → Build up to ten made shots in stages
- Advanced: include verbal or non-verbal cues for backdoor cuts and pullup jumpers

Points of Emphasis:

• Keep knees bent and hands in a ready position



Star

$\mathbf{2}$ steve nash diagonals

Instructions:

- Place seven cones on the wings, elbows, short corners, and under the basket
- Start on the right wing and dribble to the right short corner at full speed
- Execute a ball move and dribble to the right elbow, hoop, left elbow, etc.
- Turn around on the left wing retrace the course

Volume:

• Repeat 3x

Points of Emphasis:

• Master footwork and dribbling technique before increasing speed



Instructions:

- Stand around a free throw circle
- Assume a defensive stance and slide around the outside of the circle
- Change direction based on a partner's commands
 - Execute other defensive maneuvers like hitting the floor or closing out

Volume:

- 30 seconds \rightarrow Repeat 3x
 - o Build up to 60 seconds
- *Advanced:* Place hurdles around the circle and practice different jumps: two-foot jumps, single-foot jumps and rapid fire footwork

Points of Emphasis:

 In the defensive stance, keep the butt parallel to the ground and the back straight



4 KNIFE DRILL

Instructions:

- Set four cones up on the wings and elbows
- Start at the right sideline and dribble through the cones
- Dribble to the other sideline and turn the corner *hard* and attack the basket
 - Turn around and go through the cones again
- Execute ball moves to pass the cones in a tight space



Volume:

- Repeat 5x
- *Advanced:* On command, pass the ball to a coach/partner and cut back to a shooting spot for a catch and shoot opportunity

Points of Emphasis:

• Use a minimum number of bounces to attack the basket

$\mathbf{5}$ adrian dantley drill

Instructions:

- Stand under the right side of the basket
- Hold the ball above the head with two hands
- Start by jumping to slam the ball off the glass
- Jump again and finish with a power lay-up
- Repeat on the other side
- When a coach/partner calls "Outlet!"
 - o Pivot to the outside and throw a pass
 - Post up, receive a pass back, and continue with the drill

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Volume:

- 5 reps per side x 3 sets
- Advanced: Use a power ball to increase resistance

Points of Emphasis:

• Do not bring the ball down

6 BOX JUMPS

Instructions:

- Stand in front of a box and jump on to it
- Pick an appropriate height to start (i.e. 18" or 24") and move up as you improve
- Execute a variety of jumps:
 - o Two-foot linear jumps
 - o Two-foot lateral jumps
 - o Two-foot backwards jumps
 - o Single-foot jumps
 - o Pivot to simulate a box-out and jump high for the rebound
 - Jump over a hurdle or smaller box and quickly recover in order to jump on the larger box
- Land on the box with two feet and step down safely



Volume:

- 6-8 reps x 3 sets → Build up to 10-12 reps Advanced: Perform one-dribble ball moves:
 - o Power Dribble / Hop / Jump
 - o Euro Step / Jump
 - o McHale Up and Under / Jump

Points of Emphasis:

• Focus on footwork that simulates game situations

7 SPEED HURDLES SEQUENCE

Instructions:

- Execute a tuck jump over a speed hurdle
- Jump and rotate 180 degrees
- Sprawl and execute a push-up
- Return to ready position and repeat

Volume:

- 30 seconds → Build to 60 seconds
- Advanced: Use lateral footwork

Points of Emphasis:

- Move feet at game speed
- Maintain a "ready position" between all actions

8 CLOSEOUT DRILL

Instructions:

- Place cones outside the arc in the corners, the wings, and the top of the key
- Start under the hoop
 - A coach/partner will specify which cone to closeout
 - As the closeout is happening, listen for the exact footwork to follow:

Basic Commands	Footwork
"Baseline!"	Closeout with the middle foot first
"Left!"	Closeout with the left foot first
"Right!"	Closeout with the right foot first

- Drop-step and slide back to the hoop
- Repeat for each cone







Volume:

- Repeat 3x
- *Advanced:* Add additional verbal commands to increase the complexity of the drill

Advanced Commands	Footwork
"Loose Ball!"	Hit the floor
"Shot!"	Pivot and box out the shooter
"Swing!"	Stop and sprint to a help position in the key

Points of Emphasis:

• Closeout with hands up and short choppy strides

Reaction Time

Reacting to a play is as much a physical performance factor as strength, speed and quickness. Basketball is a chaotic sport that demands that players react mentally and physically to what is happening. Select one or two drills to work on at game intensity and quality. The coaching staff should ensure that players are forming good habits, such as thinking under pressure, communicating and anticipating the next play. The work:pause ratio is 1:1.

1 PURSUIT DRILL

Instructions:

- One player chases the other around the free throw circle
 - The players can change direction or speed but cannot cross into the circle
- When one player tags the other, the players switch roles

Volume:

- 60 seconds \rightarrow Repeat 3x
- *Advanced:* Use defensive footwork or resistance bands to increase difficulty

Points of Emphasis:

• Keep head up and read the court throughout the drill



$\mathbf{2}$ extra pass drill

Instructions:

- Player 1 drives into the paint
- The defensive player (X1) steps up to stop the drive and the ballhandler kicks the ball to Player 2
- X1 closes out 2, who passes the ball
- Then, X1 closes out 3, who shoots (if open) or takes a one dribble pull-up
- The offensive players rotate one position and repeat



Volume:

- 30-45 seconds → Repeat 4x
- Alternate who serves as the defensive player during each interval

Points of Emphasis:

- Talk constantly
- Make appropriate decisions given the position of the defensive player

${f 3}$ tennis ball drops

Instructions:

- Two players line up ten to fifteen feet apart
- One partner holds one tennis ball in each hand
- The other assumes a ready position
- At any time, the first partner drops one of the balls
- The pursuer tries to catch the ball before the second bounce
- Reset the position and repeat

Volume:

- 6-8 repetitions per partner \rightarrow Repeat 3x
- Advanced: Add difficulty by increasing the distance or utilizing defensive footwork

Points of Emphasis:

- Stay balanced
- Take a big first step but remain under control



Who was

last year's

NBA MVP?

4 RESPOND AND REACT

Instructions:

- The offensive player starts with the ball at the foul line while closely guarded
- The dribble reads the defender's moves in order to get to the basket
 - Fakes, ball moves and pivots are allowed
- Meanwhile, the coach asks simple basketball related questions for the ballhandler to answer

Volume:

- 30-60 seconds per partner \rightarrow Repeat 3x
- Advanced: Decrease the number of dribbles permitted

Points of Emphasis:

- Keep head up
- Perceive information with multiple senses

5 CROSS-STEP DRILL

Instructions:

- A coach stands at the foul line holding a ball on each side
- The player lines up opposite the coach
- The coach drops one of the balls (in this case the left basketball)
- The player cross-steps (with the left foot) to pick up the ball off the bounce
- After gaining possession, the player cross-steps with the non-pivot (right) foot and finishes with a power lay-up



Derric

Rose!

Volume:

About a dozen repetitions per player → Alternate left and right side randomly

Points of Emphasis:

- Master footwork before increasing speed
- Keep head up

6 POWER LAY-UPS

Instructions:

- Two players line up on each block, facing the coach who is holding the ball at the foul line
- The coach passes to one of the players.
 - The offensive player front pivots and finishes strong
 - o The defensive D-ups quickly
- Play until the defense recovers the ball
- Pass the ball to the coach and reset

Volume:

- 30-45 seconds → Repeat 2x
- Allow each player to work from each side

Points of Emphasis:

- Maintain a ready position
- Finish with a power lay-up

Speed

Basketball requires chaotic speed and the ability to quickly change direction so while these drills develop flat out speed, they also require sport-specific skills. Alternate between different drills to create variety; speed training should last a few minutes and the work:pause ratio is 1:4.

1 ACCELERATION

Instructions:

- Line up behind the baseline
- Accelerate to full speed by mid-court
- Take two strides at full speed <u>only</u>
- Decelerate in the last quarter of the court and walk back to the start





Volume:

• Repeat 3x

Points of Emphasis:

• Use the mind to control the body's speed

2 RABBIT DRILL

Instructions:

- Create a twenty-yard square with four cones plus one in the center
- Player A runs through the pylons
 - Combine forwards and backwards running in addition to defensive footwork
- After five seconds, Player B follows in pursuit
 B must copy A's movements exactly
- Switch roles and repeat

Volume:

- The drill ends when **Player B** catches **Player A** or when thirty seconds have elapsed.
- Repeat 2x

Points of Emphasis:

• Keep heads up for safety

3 6 DEFENSIVE JOBS

Instructions:

- Line up in the middle of the court
- Run up to midcourt to trap an opponent
- Pivot and force the player to the sideline
- Sprint along the sideline
- Pivot and force the player to the sideline
- Run to the other side of the key to help
- Rotate to closeout the open shooter

Volume:

• Repeat 2x on each side of the court







Toronto, Ontario, Canada March 2012 Points of Emphasis:

• Practice correct defensive footwork

4 LONG PASS DRILL

Instructions:

- Player A takes the ball out of bounds at the free throw lane extended
- Player B begins running from the corner on the same side of the court



- A throws a long pass the length of the court and starts running
- B catches the pass in the mid-post, gets under control, and makes the layup
- B rebounds the shot and takes the ball out of bounds on the opposite side of the court
- A touches the baseline and turns back to the start

Volume:

• The players continue to switch roles, until four lay-ups have been made

Points of Emphasis:

• Communicate while running at full speed

$\mathbf{5}$ fullcourt shooting

Instructions:

 One player spots up on the wing (location 1 or 4) and receives a pass from their partner

- The shooter takes a shot, sprints to the opposite baseline and back, and spots up at the next number
- After shooting from all four spots, the shooter calms down and shoots a free throw
- The partners switch roles



Volume:

• The players continue until the pair has made six out of ten shots

Points of Emphasis:

• Get under control after sprinting and employ proper shooting form



Instructions:

• Line up outside the three point line



- Make the following cuts:
 - o a U.C.L.A. cut to the baseline
 - o an "L" Cut to the wing
 - o a transition run out to the other court
 - o a "V" cut to the block and back
 - o a flare to the corner
 - o a back door cut along the baseline

Volume:

• Repeat 2x on each side of the court

Points of Emphasis:

• Always remain in a ready position

Strength

Core Training

A coach can create a meaningful strength workout in practice by dividing a squad into pairs so they can cycle through these core stations. The stations could be performed during practices or separately as part of team workouts sessions in the fitness centre or dryland training. Select four to six stations for each workout. Intervals begin at thirty seconds and build towards a minute and players should visit each station three times. The work:pause ratio is 1:1.

1 RUSSIAN TWISTS

Instructions:

- One player tosses the power ball to their partner
- The partner rips the ball across the body two or more times before tossing it back

Volume:

- 20 twists (per partner) per set
- Alternate each side

Points of Emphasis:

- Keep feet off the ground
- Toss the ball in a fluid motion

Skills:

• Rebounding



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2 HIP-HIP/SHOULDER-SHOULDER

Instructions:

- One player holds the power ball in a Triple Threat position
- The player sweeps the ball through and then rips it back to the starting point
- The player throws a chest pass to their partner who does the same

Volume:

• 20 pivots per partner per set

Points of Emphasis:

- Touch all four points (hip, hip, shoulder, shoulder) at game speed
- Keep knees bent

Skills:

- Passing
- Dribbling

3 PLANK/SIDE PLANK

Instructions:

- Plank Position
 - Lie on the floor, resting on the elbows and toes
 - Keep the back and neck straight and the abdominal muscles tight
- Side-Plank Position
 - Lie sideways on the floor, resting on the right elbow
 - Hold a dumbbell in the left hand and raise the arm above the head
 - o Repeat on the other side

Volume:

• 30 seconds → Build to 60 seconds







Points of Emphasis:

• Keep a straight line from head to heels

Skills:

• Rebounding

4 SUPERMAN STRETCH

Instructions:

- Assume plank position
- Lift the right arm and left leg (always life opposite limbs)
- Hold for three seconds
- Drive the right knee into the chest
- Repeat with the left arm and right leg

Volume:

• Both partners should perform the exercises for the duration of the interval

1

• 10-12 stretches per set

Points of Emphasis:

• Remain under control

Skills:

• Lay-ups

$\mathbf{5}$ glut plank extensions

Instructions:

- Assume glut plank position on the back, resting on elbows
- Lift the right leg and form a straight line from head to heel
- Hold the leg extended
- Alternate right and left legs

Volume:

- Both partners should perform the exercises for the duration of the interval
- 10-12 lifts per set





Points of Emphasis:

• Keep the abdominals and the buttocks tight

Skills:

• Jumping

6 WALL SITS AND DRIVES

Instructions:

- Wall Sits
 - Sit with the back against the wall and the knees bent
 - Keep the knees at a 90°
 - o Hold a power ball at chest height
- Wall Drives
 - Lean against the wall, facing forward





- o Form a straight line from the feet to the shoulders
- o Execute a powerful knee lift towards the chest
- o Repeat with the other leg

Volume:

- 30 seconds → Build to 60 seconds
- Alternate between exercises

Points of Emphasis:

• Focus on the core

Skills:

- Ready position (Wall Sits)
- Sprinting in transition (Wall Drives)

Sport-Specific Training

By adding additional resistance to regular basketball movement, coaches can incorporate sportspecific strength training into practices. In order to execute powerful movements in games, players must practice strength training from a balanced position at high intensity.

These stations focus on developing the triceps, hips, quadriceps and hamstrings. Select four to six stations for the players to cycle through in partners. Each set includes 6-8 repetitions early in the season building towards a dozen reps later. The work:pause ratio is 1:2.

1 ALTERNATING LUNGES

Instructions:

- Start in the lunge position with the right leg in front
- Jump into the air
- Land with the opposite (left) leg in front
- Repeat with the other leg

Volume:

• 12 lunges (6 per leg) per set

Points of Emphasis:

- Drop hips
- Stay balanced and under control

Skills:

• First step

2 DEFENSIVE CYCLE

Instructions:

- Space a series of cones equally apart
- Starting under the basket, hold a power ball at chin height
- Slide between the cones, drop stepping to change direction
- Move back towards the basket, passing the ball between the legs
- Explode towards the rim with a two foot jump

Volume:

• 30 seconds \rightarrow Build to 60 seconds

Points of Emphasis:

• Stay low until the vertical jump

Skills:

- Defensive Footwork
- Finishing in Traffic





$\mathbf{3}$ single arm push-ups

Instructions:

- Assume push-up position
- Place the basketball under one arm
- Complete push-up
- Roll ball to other hand and complete a pushup with the opposite hand

Volume:

• 20 push-ups (10 per arm) per set

Points of Emphasis:

• Keep back straight and arms close to body

Skills:

- Dribbling
- One-Arm Push Passes



4 POWER BALL TOSSES AND SLAMS

Instructions:

- Tosses
 - o Start with knees bent and the ball at chest height
 - o Explode with the legs and throw the ball in the air
- Slams
 - Hold the ball straight out at chest height
 - o Lift the ball up and pound it into the ground

Volume:

• 6-8 Tosses/Slams per set

Points of Emphasis:

- Follow safety rules at all time
- Toss or slam the ball straight up or down

Skills:

- Shooting
- Rebounding



$\mathbf{5}$ single leg with weight

Instructions:

- Hold dumbbells or a power ball at chest height
- Balance on the right foot, lean forward, and lift the left foot backwards
- Alternate between the right and left feet

Volume:

• 6-8 swings per leg per set

Points of Emphasis:

- Lock the hips and keep the leg and back straight
- Master good form before adding too much weight

Skills:

- Defence
- Recovering Loose Balls

6 CONTACT DRILL

Instructions:

- A player tries to pivot while a defender fouls them
 - Use blocking pads, if available, or hand-checks
- A coach is available nearby as a pressure release
 - After passing to the pressure release, the player reposts or cuts again to get open
- Once time expires, try to score

Volume:

- 30 seconds → Build to 60 seconds
- Load the drill by adding dribbling or using resistance bands
- •

Points of Emphasis:

• Remain balanced while moving at game intensity





Skills:

• Playing through Fouls

7 WALL PASSES

Instructions:

- Hold a power ball near a wall
- Practice the following passes at game speed: One-Handed Overhead Tips (Left and Right), Overhead Passes, Chest Passes, One-Handed Circle Passes (Left and Right) and Side Chest Passes

Volume:

• 10-12 extensions per pass

Points of Emphasis:

- Bend the knees and remain balanced
- Throw the passes as quickly as possible

Skills:

• Passing

8 HOLD IN PLACE

Instructions:

- Hold a basketball straight as another player pushes
- Practice different positions: Ready Position, Defensive Stance, Squat, Lunge or Lunge Variation

Volume:

- 30-60 seconds → Repeat 3x
- Pair partners based on Zone of Proximal Development

Points of Emphasis:

- Drop hips
- Remain focused throughout the drill

Skills:

- Mental Toughness
- Finishing in Traffic



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Individual Workouts

- Guard Workout... page 1
- Post Workout... page 2

Guard Workout

Workout Goal: Agility and Quickness

Workout Outline:

- Warm-up (Not Shown)
 - o Cardio
 - o Dynamic Stretching
 - o Speed
- Physical Performance Factors Circuit
 Repeat Each Station 2-3 Times
 - o Agility
 - Speed Ladder Work
 - Defensive Sequence
 - Lateral Speed Lunges
 - Cone Slalom
- Game Situations

- o Quickness
 - Ball Moves
 - Get Low/Finish High
 - Circular Strides
 - Adrian Dantley Drill
- Repeat with Both Hands Execute Each Move to the Middle and the Baseline o One Dribble Moves
 - Elbow
 - Wing
 - o Avoid Charge
 - Pull-up
 - Reverse Lay-up
 - Euro Step
 - Inverted Jump Stop and Front Pivot
 - o Screen and Roll
 - Finish at the Rim
 - Reject Screen
 - Pull-Up in Front of Hedge
 - o Seven Shooting Spots
 - Catch and Shoot (2pts and 3pts, depending on range)
 - One-Dribble Pull-up Shots
 - o Shooting in the Paint
 - Two Dribbles from the Top of the Key, One Foot in the Paint
 - Turnaround Jump Shot from the Mid-Post
 - o Foul Shooting
- Cool Down (Not Shown)
 - o Cardio
 - o Static Stretching

YouTube Clips:

- Part I: <u>http://www.youtube.com/watch?v=nd-TNx4K-30</u>
- Part II: <u>http://www.youtube.com/watch?v=nffqWCKH2cM</u>

Individual Workouts

Post Workout

Workout Goal: Footwork and Explosiveness

Workout Outline:

- Warm-up (Not Shown)
 - o Cardio
 - o Dynamic Stretching
 - o Speed
- Physical Performance Factors Circuit *Repeat Each Station 2-3 Times*
 - o Footwork
 - Skipping
 - Ballhandling
 - Rim Runs
 - Ankle Exercises
 - Posting Up Footwork

- o Explosiveness
 - Box Jumps
 - Depth Jumps
 - Push-Ups

Sikma Move

McHale Move

Four SportsTop of the Key

Cross-Step

o Matrix Shooting

o Foul Shooting

.

 Pivoting in the Post with Power Ball

Shot-Fake and Drive

Game Situations
 Repeat with Both Hands • Execute Each Move to the Middle and the Baseline

- o 30-60 Second Intervals
 - Mikan Drill
 - Reverse Mikan Drill
 - Rebound, Catch and Finish
- o Post Moves and Counters
 - Hook Shots
 - Slide Step
 - Wheel Move
 - Power Dribble
- o Penetrate and Kick
 - Baseline
 - Front Pivot
- o Jump Shot
 - Elbows
 - Hop Step
- Cool Down (Not Shown)
 - o Cardio
 - o Static Stretching

YouTube Clips:

- Part I: <u>http://www.youtube.com/watch?v=n9iMBbZpBNs</u>
- Part II: <u>http://www.youtube.com/watch?v=-TjX9r0Tsvk</u>

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4

List of Resources

- YouTube Channel... page 1
- Works Cited... page 1

Conclusion

YouTube Channel

The video clips used for instructional purposes can be found on my YouTube channel. →→→ Link: <u>http://www.youtube.com/user/coachbourgase</u>

Individual Workouts: <u>http://www.youtube.com/playlist?list=PL6E97055EF855AB58</u>

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"The fight is won or lost far away from witnesses behind the lines, in the gym and out there on the road – long before I dance under those lights." - Muhammad Ali